

# Notice of Allowability

Application No.

09/876,135

Examiner

Quynh H Nguyen

Applicant(s)

ICHIHARA, MASAKI

Art Unit

2642

## -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 06/08/01.
2. ☒ The allowed claim(s) is/are 1-12.
3. ☒ The drawings filed on 08 June 2001 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☒ All    b) ☐ Some\*    c) ☐ None    of the:
    1. ☒ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

### Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

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***Allowable Subject Matter***

1. Claims 1-12 are allowed.
2. The following is a statement of reasons for the indication of allowable subject matter:

Feldman (U.S. Patent 6,782,249) teaches a receiver for direct conversion of RF signals comprising a quadrature signal generation circuit having an oscillator with an oscillation frequency of  $\frac{2}{3}$  times that of the carrier frequency of the RF signal. The quadrature generation circuit includes a divide-by-two division circuit to provide quadrature signals having a frequency of  $\frac{1}{3}$  that of the carrier frequency, and further including mixers and filters to mix the output of the oscillator and the output of the divide-by-two division circuit so as to provide quadrature signals at the carrier frequency.

Igarashi et al. (U.S. Patent 5,926,749) teach amplifier circuit for amplifying an IF signal and a current-constant mode variable amplifying circuit for amplifying and RF signal. I and Q signals used as transmit signals are modulated by a QPSK modulating circuit where it is converted into an IF signal. The IF signal is mixed into a local oscillating frequency produced from a local oscillator by a mixer, where it is converted to an RF transmit signal. The RF transmit signal is applied to an RF-stage variable amplifying circuit where it is amplified based on the AGC voltage VAGC used commonly to the IF and RF stages.

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However, prior art of record fails to teach, or render obvious, alone or in combination, a direct conversion receiver, in claim 1, and a transceiver, in claim 6, which is used in a radio unit and converts a reception signal inputted thereto from an antenna directly into a baseband signal, the radio unit using different frequencies for transmission and reception, the receiver comprising: a quadrature demodulator for performing quadrature demodulation of the reception signal based on the internal local signal to generate the baseband signal; wherein a carrier frequency of a transmission signal of the radio unit is represented by  $f(t)$  and a carrier frequency of the reception signal is represented by  $f(r)$  and a frequency interval  $f(s)$  between the carrier frequencies of the transmission and reception signals is given as  $f(s) = |f(r) - f(t)|$ , when  $f(r) > f(t)$ , the first local frequency  $f(LO1)$  satisfies  $f(LO1) \sim f(t) - f(s)$  while the second local frequency  $f(LO2)$  satisfies  $f(LO2) \sim 2 \cdot f(s)$  and a frequency of the internal local signal is a sum frequency of the first local frequency and the second local frequency, but when  $f(r) < f(t)$ , the first local frequency  $f(LO1)$  satisfies  $f(LO1) \sim f(t) + f(s)$  while the second local frequency  $f(LO2)$  satisfies  $f(LO2) \sim 2 \cdot f(s)$  and the frequency of the internal local signal is a difference frequency between the first local frequency and the second local frequency.

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Quynh H. Nguyen whose telephone number is 703-305-5451. The examiner can normally be reached on Monday - Thursday from 6:30 A.M. to 5:00 P.M.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ahmad Matar, can be reached on (703) 305-4731. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-4700.

qhn

Quynh H. Nguyen

November 24, 2004

  
AHMAD F. MATAR  
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